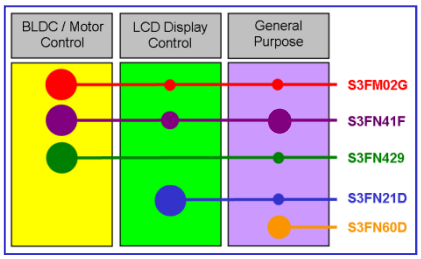
MSC-GE SAMSUNG Cortex-M0 & Cortex-M3

Cortex-M0, Cortex-M3 and Tools

Device Overview

Device	CPU	Speed	DMA	Flash / Data F.	RAM	Pins	ADC	COMP / OP-AMP	3-Phase PWM	Encoder Timer	CAN/ USB	LCD	Temp.	V
S3FN429	M0	40 MHz	-	32k	2k	44	10x 12-bit	4 / 1	1x	1x	- / -	-	-40 to 105℃	2.5-5.5
S3FN41F	M0	40 MHz	6	256k	32k	80	10x 12-bit	1 / 3	1x	1x	1 / 1	28x8 or 32x4	-40 to 85℃	1.8-5.5
S3FN21D	M0	40 MHz	6	128k	8k	176	12x 10-bit	-	-	-	- / 1	80x32	-40 to 85℃	1.8-5.5
S3FN60D	M0	20 MHz	1	128k	8k	64	8x 10-bit	-	-	-	- / 1	-	-25 to 85℃	1.6-3.6
S3FM02G	M3	75 MHz	10	384k / 16k	24k	128	12-bit (2x) 10-bit (1x)	- / 5	2x	2x	2 / -	40x4	-40 to 85℃	2.7-5.5

S3FN429 and S3FN21D support single wire debug, S3FN60D supports JTAG, S3FM02G supports single wire or JTAG & ETM debug interfaces

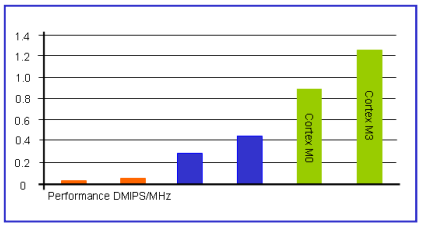


Select the right device!

Based on the competitive pricing, SAMSUNG covers a wide range of **motor-control** applications with only three 32-bit devices. The S3FN429 in the 8-bit range, the S3FN41F in the 16/32-bit range and the S3FM02G in the upper performance class.

Unique in the MCU market is the S3FN21D with integrated **80x32** LCD controller/driver. This device is perfect for driving big customized LCDs or small dot-matrix displays.

The S3FN60D can be used for a wide range of general purpose applications. With a key matrix input and IR-interface, it is also suitable for use in **remote control** systems.



Cortex-M0 & Cortex-M3

The ARM Cortex™-M processor family is an upwards compatible range of energy-efficient, easy to use processors designed to help developers meet the needs of tomorrow's embedded applications. Those demands include delivering more features at a lower cost, increasing connectivity, better code reuse and improved energy efficiency.

Cortex-M0
Based on the ARMv6-M architecture, the exceptionally small silicon area, low power and minimal code footprint of the processor enable developers to achieve *32-bit performance at an 8-bit price* point, bypassing the step to 16-bit devices. The 3-stage pipeline, Thump/Thump-2 support and single cycle 32x32 multiply allow performance up to 0.9 DMIPS/MHz.

Cortex-M3
The ARM Cortex™-M3 processor is the industry-leading 32-bit processor for highly deterministic real-time applications and has been specifically developed to realize high-performance low-cost platforms for a wide range of applications. Based on ARMv7-M architecture, integrated 3-stage pipeline, 32x32 multiplier, divider and implementation Thump-2 instruction set, it allows performance up to 1.25 DMIPS/MHz.

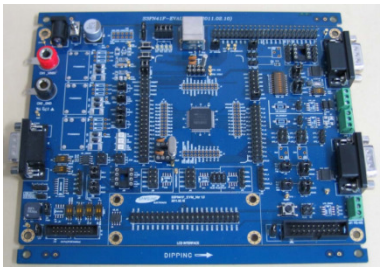
SAMSUNG: www.samsungsemi.com
ARM: www.arm.com
ARM Support: www.arm.com/support
IAR: www.iar.com

www.msc-ge.com
Samsung-Micros@msc-ge.com

MSC-GE SAMSUNG Cortex-M0 & Cortex-M3

Cortex-M0, Cortex-M3 and Tools

Evaluation Boards



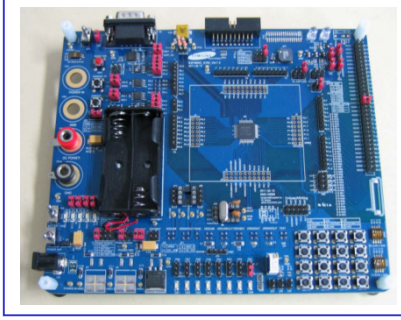
Evaluation board for S3FN41F

The S3FN41F_EVM_ver1.0 provides many features to start with the S3FN41F.

- Single wire debug interface
- CAN and LIN interfaces
- RS232 interface
- RS485 interface
- Pin-out to connect an external LCD
- Pin-out to connect inputs to ADC
- USB function interface
- Power supply

Order Code:
S3FN41F_EVM_ver1.0

Resale price:
250.00 Euros



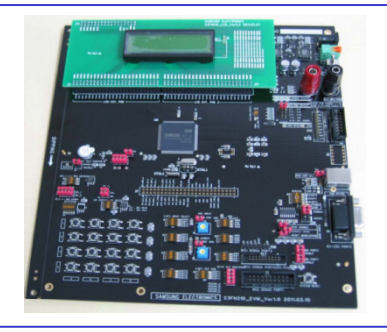
Evaluation board for S3FN60D

The S3FN60D_EVM_ver1.0 provides everything you need to start with the S3FN60D.

- JTAG debug interface
- RS232 interface
- USB function interface
- Infrared interface
- Key matrix
- Power supply

Order Code:
S3FN60D_EVM_ver1.0

Resale price:
250.00 Euros



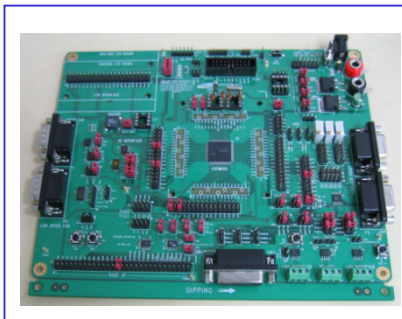
Evaluation board for S3FN21D

The S3FN21D_EVM_ver1.0 helps to start with the S3FN21D.

- Single wire debug interface
- LCD
- RS232 interface
- USB function interface
- Key matrix
- Power supply

Order Code:
S3FN21D_EVM_ver1.0

Resale price:
250.00 Euros



Evaluation board for S3FM02G

S3FM02G_EVM_ver1.0 evaluation board makes it easy to start with Cortex-M3, S3FM02G.

- Single wire or JTAG interface
- ETM (trace interface)
- 2x CAN interface
- Pin-out to connect an external LCD
- Input pins for op-amps & ADCs
- RS232 interface
- RS485 interface
- LIN interface
- Encoder input
- Timer output
- Power supply

Order Code:
S3FM02G_EVM_ver1.0

Resale price:
250.00 Euros

Demo Software for all boards included in EWARM package.

SAMSUNG: www.samsungsemi.com
ARM: www.arm.com
ARM Support: www.arm.com/support
IAR: www.iar.com

www.msc-ge.com
Samsung-Micros@msc-ge.com

MSC-GE SAMSUNG Cortex-M0 & Cortex-M3

Cortex-M0, Cortex-M3 and Tools

SAMSUNG Tools for SAMSUNG Cortex-M0/M3

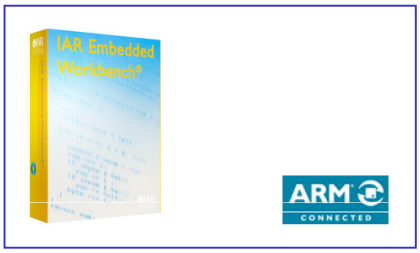
SAMSUNG SM-Link (On-Chip Debug Emulator)

- Supported devices: Samsung Cortex-M series MCUs
- Emulating type: JTAG/SWD interface
- 3.3V/5V 100mA power output
- Software breakpoint: unlimited
- Hardware breakpoints Cortex-M0/M3: 4/6
- Data breakpoints Cortex-M0/M3: 2/4
- Supported development environment: IAR EWARM
- USB interface to PC

Order Code:
SM-Link

Resale price:
75.00 Euros

IAR ARM Tools for SAMSUNG Cortex-M0/M3



IAR Embedded Workbench

- Supports all ARM based architectures
  ARM7, ARM9, ARM11, Cortex-M0 / M3 / M4 / A8 / A9..
- Supports SAMSUNG Cortex-M0 & Cortex-M3 devices
  (core, header, DDF, examples)
- Includes compiler, linker, debugger, assembler,..
- Supports SAMSUNG SM-Link

- EWARM-BL: limited to 256k Flash, no MISRA C Checker
- EWARM-CM: only support for Cortex M0, M1, M3
- EWARM: full support for all ARM devices, no limitations

- Free 32k code limited version available for Cortex M3
- Free 8k code limited version available for Cortex M0
- Free 30 day limited version available

Order Code:
EWARM-BL
Resale Price:
2580,00 Euros

Order Code:
EWARM-CM
Resale Price:
3250,00 Euros

Order Code:
EWARM
Resale Price:
4350,00 Euros

On-Chip Debug Emulator (JTAG)

- Supports single wire debug, supports JTAG
- Supports all Cortex-M0, M3, ARM7, ARM9, ARM11
  including also SAMSUNG Cortex-M0 & Cortex-M3 MCUs
- Wide target voltage range: 1.2V - 3.3V, 5V tolerant
- Optional adapter for 5V targets available
- USB interface to PC

Order Code:
JLINK-ARM

Resale price:
250.00 Euros

On-Chip Debug Emulator + Trace (JTAG)

- Supports single wire debug, supports JTAG
- Supports Cortex-M3, ARM7, ARM9 (debug, JTAG)
- Supports ETM Trace for Cortex-M3 based devices
  including also SAMSUNG Cortex-M3 MCUs
- Wide target voltage range: 1.2V - 3.3V, 5V tolerant
- USB interface to PC

Order Code:
JTRACE-CM3

Resale price:
995.00 Euros

SAMSUNG: www.samsungsemi.com
ARM: www.arm.com
ARM Support: www.arm.com/support
IAR: www.iar.com

www.msc-ge.com
Samsung-Micros@msc-ge.com

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Reference Designs

S3FM02G – inverter motor vector control

Free download at SAMSUNG web

The reference design is based on the S3FM02G. This Cortex-M3 device is running with up to 75 MHz, includes 2x multiplexed 12-bit ADCs, encoder input and 3-phase timers.

Available:
- application notes
- source code
- board schematics & description
- PFC & PMSM sensorless control
- self-test program

S3FN60D – key, slider, rotary, 2D pad

Contact MSC-GE

The touch reference design is based on the Cortex-M0 device S3FN60D and uses a software library to realize capacitive touch applications.

Available:
- board schematics & description
- touch software architecture & design manual

SAMSUNG: www.samsungsemi.com
ARM: www.arm.com
ARM Support: www.arm.com/support
IAR: www.iar.com

www.msc-ge.com
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